IN THE CLAIMS:

Please amend the claims as follows:

1. (Previously Presented) A method for tracking a speaker in an audio source, said method comprising the steps of:

identifying, by using one or more processors of a computer system, potential segment boundaries in said audio source; and

clustering, by using one or more processors of said computer system, homogeneous segments from said audio source substantially concurrently with said identifying step.

2. (Original) The method of claim 1, wherein said identifying step identifies segment boundaries using a BIC model-selection criterion.

3. (Original) The method of claim 2, wherein a first model assumes there is no boundary in a portion of said audio source and a second model assumes there is a boundary in said portion of said audio source.

4. (Original) The method of claim 2, wherein a given sample, i, in said audio source is likely to be segment boundary if the following expression is negative:

$$\Delta BIC_i = -\frac{n}{2}\log|\Sigma_w| + \frac{i}{2}\log|\Sigma_f| + \frac{n-i}{2}\log|\Sigma_s| + \frac{1}{2}\lambda\left(d + \frac{d(d+1)}{2}\right)\log n$$

where $|\Sigma_w|$ is the determinant of the covariance of the window of all n samples, $|\Sigma_f|$ is the determinant of the covariance of the first subdivision of the window, and $|\Sigma_s|$ is the determinant of the covariance of the second subdivision of the window.

5. (Original) The method of claim 1, wherein said identifying step considers a smaller window size, n, of samples in areas where a segment boundary is unlikely to occur.

6. (Original) The method of claim 5, wherein said window size, n, is increased in a relatively slow manner when the window size is small and increases in a faster manner when the window size is larger.

7. (Original) The method of claim 5, wherein said window size, n, is initialized to a minimum value after a segment boundary is detected.

8. (Original) The method of claim 2, wherein said BIC model selection test is not performed at the border of each window of samples.

9. (Original) The method of claim 2, wherein said BIC model selection test is not performed when the window size, n, exceeds a predefined threshold.

10. (Original) The method of claim 1, wherein said clustering step is performed using a BIC model-selection criterion.

11. (Original) The method of claim 10, wherein a first model assumes that two segments or clusters should be merged, and a second model assumes that said two segments or clusters should be maintained independently.

12. (Original) The method of claim 11, further comprising the step of merging said two clusters if a difference in BIC values for each of said models is positive.

13. (Original) The method of claim 1, wherein said clustering step is performed using K previously identified clusters and M segments to be clustered.

14. (Original) The method of claim 1, further comprising the step of assigning a cluster identifier to each of said clusters.

15. (Original) The method of claim 1, further comprising the step of processing said audio source with a speaker identification engine to assign a speaker name to each of said clusters.

16. (Previously Presented) A method for tracking a speaker in an audio source, said method comprising the steps of:

identifying, by using one or more processors of a computer system, potential segment boundaries in said audio source; and

clustering, by using one or more processors of said computer system, segments from said audio source corresponding to the same speaker substantially concurrently with said identifying step.

17. (Original) The method of claim 16, wherein said identifying step identifies segment boundaries using a BIC model-selection criterion.

18. (Original) The method of claim 17, wherein a first model assumes there is no boundary in a portion of said audio source and a second model assumes there is a boundary in said portion of said audio source.

19. (Original) The method of claim 16, wherein said identifying step considers a smaller window size, n, of samples in areas where a segment boundary is unlikely to occur.

20. (Original) The method of claim 17, wherein said BIC model selection test is not performed where the detection of a boundary is unlikely to occur.

21. (Original) The method of claim 16, wherein said clustering step is performed using a BIC model-selection criterion, where a first model assumes that two segments or clusters should be merged, and a second model assumes that said two segments or clusters should be maintained independently.

22. (Original) The method of claim 16, wherein said clustering step is performed using K previously identified clusters and M segments to be clustered.

23. (Previously Presented) A method for tracking a speaker in an audio source, said method comprising the steps of:

identifying, by using one or more processors of a computer system, potential segment boundaries during a pass through said audio source; and

clustering, by using one or more processors of said computer system, segments from said audio source corresponding to the same speaker during said same pass through said audio source.

24. (Original) The method of claim 23, wherein said identifying step identifies segment boundaries using a BIC model-selection criterion.

25. (Original) The method of claim 24, wherein a first model assumes there is no boundary in a portion of said audio source and a second model assumes there is a boundary in said portion of said audio source.

26. (Original) The method of claim 23, wherein said identifying step considers a smaller window size, n, of samples in areas where a segment boundary is unlikely to occur.

27. (Original) The method of claim 24, wherein said BIC model selection test is not performed where the detection of a boundary is unlikely to occur.

28. (Original) The method of claim 23, wherein said clustering step is performed using a BIC model-selection criterion, where a first model assumes that two segments or clusters should be merged, and a second model assumes that said two segments or clusters should be maintained independently.

29. (Original) The method of claim 23, wherein said clustering step is performed using K previously identified clusters and M segments to be clustered.

30. (Original) A system for tracking a speaker in an audio source, comprising:

a memory that stores computer-readable code; and

a processor operatively coupled to said memory, said processor configured to implement said computer-readable code, said computer-readable code configured to:

identify potential segment boundaries in said audio source; and

cluster homogeneous segments from said audio source substantially concurrently with said identification of segment boundaries.

31. (Currently Amended) A computer program product embodied in a computer readable storage medium having computer readable program code, comprising:

a computer readable program code to identify potential segment boundaries in an ~~said~~ audio source; and

a computer readable program code to cluster homogeneous segments from said audio source substantially concurrently with said identification of segment boundaries.

32. (Original) A system for tracking a speaker in an audio source, comprising:

a memory that stores computer-readable code; and

a processor operatively coupled to said memory, said processor configured to implement said computer-readable code, said computer-readable code configured to:

identify potential segment boundaries in said audio source; and

cluster segments from said audio source corresponding to the same speaker substantially concurrently with said identification of segment boundaries.

33. (Currently Amended) A computer program product embodied in a computer readable storage medium having computer readable program code, comprising:

a computer readable program code to identify potential segment boundaries in an ~~said~~ audio source; and

a computer readable program code to cluster segments from said audio source corresponding to the same speaker substantially concurrently with said identification of segment boundaries.

34. (Original) A system for tracking a speaker in an audio source, comprising:

a memory that stores computer-readable code; and

a processor operatively coupled to said memory, said processor configured to implement said computer-readable code, said computer-readable code configured to:

identify potential segment boundaries during a pass through said audio source; and

cluster segments from said audio source corresponding to the same speaker during said same pass through said audio source.

35. (Currently Amended) A computer program product embodied in a computer readable storage medium having computer readable program code, comprising:

a computer readable program code to identify potential segment boundaries during a pass through an ~~said~~ audio source; and

a computer readable program code to cluster segments from said audio source corresponding to the same speaker during said same pass through said audio source.